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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,476	03/08/2002	Rikuro Obara	2523-074	1201

7590 05/06/2004

ISRAEL GOPSTEIN, Esq.
Suite 200C
14301 Layhill Rd.
P.O. Box 9303
Silver Spring, MD 20916-9303

EXAMINER

MOHANDESI, IRAJ A

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,476	OBARA, RIKURO	
	Examiner	Art Unit	
	Iraj A Mohandesi	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3,4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuta US patent 5,138,209 in view of Torrant 3,986,754.

Chuta'209 discloses a motor having a rotational member (126) supported through a bearing device (110) provided on a base member (105) of the motor, the bearing device comprising upper and lower ball bearings each of which includes an inner ring (114) fit around a shaft (108) of the motor, an outer ring (118) and a plurality of balls (122,124) interposed there between, the bearing device further comprising, a spacer (125) interposed between the outer ring of the upper and lower ball bearing (see Fig.1), spacer (125) inherently press fit (see Fig.1).

Chuta'209 teaches all limitation of the claimed invention except for a spacer made of material larger in its coefficient of linear expansion than of the upper and lower outer rings.

Torrant'754 disclosed a bearing having a spacer (20) of material larger in its coefficient of linear expansion than of the upper and lower outer rings (see column 2, lines 25-35 Fig

3. spacer 20 is between the upper and lower outer races), for the purpose of flexibility with respect to the upper and lower race to provide a proper axial fit.

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The examiner takes official notice ,that Torrant's hard metal upper and lower outer rings 41/42 have a smaller linear coefficient of thermal expansion than the soft metal spacer (20 column 2,line 25-35, Fig. 3).

Therefor it would be obvious to one having ordinary skill in the art at the time the invention was made to combine Chuta'209 motor a spacer having material larger in its coefficient of linear expansion than of the upper and lower outer rings as taught by Torrant'754 for the purpose of flexibility with respect to the upper and lower race to provide a proper axial fit.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Obara US patent 5,828,150 in view of Torrant'754.

Obara"150 discloses a motor having a rotational member (10) supported through a bearing device provided on a base member (9) said bearing device comprising; a stepped shaft (1) including a larger diameter shaft portion (2a) around which an inner raceway (2a) is formed directly thereon and a reduced diameter shaft portion (1b) a ball bearing including an inner ring (5a) fit around the reduced diameter shaft portion (see Fig.1) and an outer ring (5b), an outer ring surrounding the inner ring raceway provided around the a plurality of larger diameter shaft portion, a plurality of balls (6) balls interposed between the inner ring raceway and the outer ring raceway formed on the inner h l surface of the outer ring and a spacer (7) interposed between the outer ring of the ball bearing and the outer ring provided around the larger diameter shaft portion;

Obara"150 teaches all limitation of the claimed invention except for a spacer made of material larger in its coefficient of linear expansion than of the upper and lower outer rings.

Tarrant'754 disclosed a bearing having a spacer (20) of material larger in its coefficient of linear expansion than of the upper and lower outer rings (see column 2, lines 25-35, Fig. 3), for the purpose of flexibility with respect to the upper and lower race to provide a proper axial fit.

The examiner takes official notice, that Tarrant's hard metal upper and lower outer rings 41/42 have a smaller linear coefficient of thermal expansion than the soft metal spacer (20 column 2, line 25-35, Fig. 3).

Therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to combine Obara"150 motor a spacer having material larger in its coefficient of linear expansion than of the upper and lower outer rings as taught by Tarrant'754 for the purpose of flexibility with respect to the upper and lower race to provide a proper axial fit.

4. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara"150 and Tarrant'754 as applied to claims 1-4 above, and further in view of Gonser US patent 4,966,552.

Obara"150 and Tarrant'754 do not teach a rotary instrument having roller bearing made of ceramic,

Regarding claims 5-8, Gonser'552 disclosed a rotary instrument having roller bearing made of ceramic for the purpose of non-lubricant bearing.

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Therefor it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Obara'150 Torrant'754 motor with a ceramic bearing as taught by Gonser'552 for the purpose of non-lubricant bearing.

Response to Arguments

5. Applicant's arguments filed 03/02/2004 have been fully considered but they are not persuasive.

6. Chuta'209 in combination with Torrant'754 clearly teaches all claimed limitations of claims 1,3,4.

Chuta'209 discloses a rotational member (126), a bearing device (110), a base member (105), an inner ring (114, 116), a shaft (108), an outer ring (118) and a plurality of balls (122,124), a spacer (125) and Torrant'754 teaches a bearing having a spacer (20) of soft material, which has inherently a larger in its coefficient of linear expansion. Ring 20 is made of soft metal and the races 41, 42 are hard metal. According to the attached document the soft metal such as Aluminum and Brass have higher linear coefficient of thermal expansion than steel. Torrant'754's races of ball bearing are made of hard material such as ceramic or stainless steel.

Regarding claim 2,5-8.

Obara'150 combined with Torrant'754 modified by Gonser'552 clearly teaches all claimed limitations of claims 2,5-8 as described above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsuzaki US patent 6342,743.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iraj A Mohandesi whose telephone number is 571-272-2028. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IM April 30, 2004


BURTON S. MULLINS
PRIMARY EXAMINER